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**REMARKS**

Claims 1-85 were filed in the present case. The claims were subject to a restriction requirement. The Applicants elected Claims 1-50 in a prior response. Claims 29-37 stand rejected by the Examiner, Claims 38-39 are objected to by the Examiner, and Claims 1-28 and 40-51 are allowed. The Applicants have cancelled Claims 29-37. Claims 48-50 have been renumbered as Claims 49-51 by the Examiner. As such, Claims 1-28 and 38-51 are pending. A copy of the currently pending claims is attached to this communication as Appendix II.

The Examiner has objected to the disclosure because "(t)he continuation data in the specification are incomplete." (Office Action, pg 2). This objection is moot in view of Applicants amendment to the first paragraph of the specification. The Applicants submit that the specification, as amended, provides a proper priority claim (See C.F.R. 1.78 (2)(i), which states that the reference to prior filed applications identify priority applications by application number). As the application number of the prior filed application was included at the filing date of the present application, the Applicants submit that no petition for an unintentionally delayed claim for priority is required.

Applicants note that all amendments and cancellations of Claims presented herein are made without acquiescing to any of the Examiner's arguments or rejections, and solely for the purpose of expediting the patent application process in a manner consistent with the PTO's Patent Business Goals (PBG),<sup>1</sup> and without waiving the right to prosecute the amended or cancelled Claims (or similar Claims) in the future.

In the present Office Action, the Examiner made a number of arguments, objections, and rejections. For clarity, the rejections at issue are set forth by number in the order they are herein addressed:

(1) Claims 29-36 stand rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention;

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<sup>1</sup> 65 Fed. Reg. 54603 (Sept. 8, 2000).

(2) Claim 37 stands rejected under 35 U.S.C. 103 as allegedly being obvious in light of Engelhardt (U.S. Patent 5,260,433) in view of Ward (U.S. Patent 4,711,955); and

(3) Claims 29-31 and 34-35 stand rejected under 35 U.S.C. 102, first paragraph as allegedly being anticipated by Woo *et al.* (U.S. Patent 5,231,191).

**I. The Claims are not Indefinite**

The Examiner has rejected Claims 29-36 as allegedly being indefinite for failing to particularly point out and distinctly claims the subject matter which applicant regards as the invention (Office Action, pg. 4). The Applicants respectfully disagree. However, in order to further the business interests of the Applicants and while reserving the right to prosecute the original (or similar) claims in the future, the Applicants have cancelled Claims 29-36. As such, the rejection is moot.

**II. The Claims are not Obvious**

The Examiner has rejected Claim 37 as allegedly being obvious in light of U.S. Patent 5,260,433 in view of U.S. Patent 4,711,955 (Office Action, pg. 5). The Applicants respectfully disagree. However, in order to further the business interests of the Applicants and while reserving the right to prosecute the original (or similar) claims in the future, the Applicants have cancelled Claim 37. As such, the rejection is moot.

**III. The Claims are Novel**

The Examiner has rejected Claims 29-31 and 34-35 as allegedly being anticipated by U.S. Patent 5,231,191 (Office Action, pg. 6). The Applicants respectfully disagree. However, in order to further the business interests of the Applicants and while reserving the right to prosecute the original (or similar) claims in the future, the Applicants have cancelled Claims 29-31 and 34-35. As such, the rejection is moot.

**IV. Claims 38-39 have been rewritten**


The Examiner has objected to Claims 38-39 as being dependent upon a rejected base claim, but otherwise allowable if rewritten in independent form (Office Action, pg. 7). Claims

38-39 have been rewritten in independent form. As such, the Applicants request that the objection be withdrawn and that Claims 38-39 be allowed.

**CONCLUSION**

All grounds of rejection and objection of the Office Action of December 26, 2002 having been addressed, reconsideration of the application is respectfully requested. It is respectfully submitted that the Claims should be allowed. Should the Examiner have any questions, or if a telephone conference would aid in the prosecution of the present application, Applicant encourages the Examiner to call the undersigned collect at 608-218-6900.

Dated: March 26, 2003

  
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**Appendix I**  
**Version with Markings to Show Changes Made**

**IN THE SPECIFICATION:**

Please amend the paragraph beginning on page 1, line 3 as follows:

The present invention is a continuation-in-part of pending U.S. patent application No. 09/333,145, [which is a continuation application of U.S. Patent No. 6,001,567,] herein incorporated by reference in its entirety.

**Appendix II**  
**Pending Claims**

1. A composition comprising a charge tag attached to a terminal end of a nucleic acid molecule, said charge tag comprising a phosphate group and a positively charged moiety.
2. The composition of Claim 1, wherein said charge tag further comprises a dye.
3. The composition of Claim 2, wherein said dye is positioned between said nucleic acid and said positively charged moiety.
4. The composition of Claim 2, wherein said positively charged moiety is positioned between said nucleic acid and said dye.
5. The composition of Claim 1, wherein said charge tag further comprises a second positively charged moiety.
6. The composition of Claim 1, wherein said charge tag has a net positive charge of 1 at pH 6-10.
7. The composition of Claim 1, wherein said charge tag has a net positive charge of 2 at pH 6-10.
8. The composition of Claim 1, wherein said charge tag further comprises one or more nucleotides.
9. The composition of Claim 8, wherein said nucleic acid molecule comprises a sequence complementary to a target nucleic acid, wherein said one or more nucleotides of said charge tag are not complementary to said target nucleic acid.

10. The composition of Claim 1, wherein said nucleic acid comprises a first portion complementary to a target nucleic acid and a second portion that is not complementary to said target nucleic acid, wherein said second portion comprises said terminal end.
11. The composition of Claim 1, wherein said nucleic acid and said charge tag have a combined net neutral charge and wherein said charge tag has a net positive charge.
12. The composition of Claim 1, wherein said nucleic acid and said charge tag have a combined net negative charge and wherein said charge tag has a net positive charge.
13. The composition of Claim 1, wherein said charge tag contains a primary amine.
14. The composition of Claim 1, wherein said charge tag contains a secondary amine.
15. The composition of Claim 1, wherein said charge tag contains a tertiary amine.
16. The composition of Claim 1, wherein said charge tag contains an ammonium group.
17. The composition of Claim 1, wherein said charge tag further comprises a positively charged phosphoramidite.
18. The composition of Claim 1, wherein said charge tag further comprises a neutral phosphoramidite.
19. A composition comprising a positively charged phosphoramidite.
20. The composition of Claim 19, wherein said phosphoramidite comprises a primary amine group.

21. The composition of Claim 19, wherein said phosphoramidite comprises a secondary amine group.
22. The composition of Claim 19, wherein said phosphoramidite comprises a tertiary amine group.
23. The composition of Claim 19, wherein said phosphoramidite comprises an ammonium group.
24. The composition of Claim 19, wherein said phosphoramidite has a net positive charge of one.
25. The composition of Claim 19, wherein said phosphoramidite has the structure:



wherein, X is a reactive phosphate group and Y is a protected hydroxyl group.

26. A composition comprising a nucleic acid molecule, said nucleic acid molecule comprising a positively charged phosphoramidite.
27. A composition comprising a charge tag attached to a terminal end of a nucleic acid molecule, said charge tag comprising a positively charged phosphoramidite.
28. The composition of Claim 27, wherein said positively charged phosphoramite comprise an amine group, wherein said amine group is not further attached to another molecule.
38. A composition comprising a fluorescent dye directly bonded to a phosphate group, wherein said phosphate group is directly bonded to an amine group, wherein said



composition comprises a charge tag, and wherein said fluorescent dye is contained within said charge tag.

39. The composition of Claim 38, wherein said fluorescent dye comprises Cy3.

40. A mixture comprising a plurality of oligonucleotides, each oligonucleotide attached to a different charge tag, each of said charge tags comprising a phosphate group and a positively charged moiety.

41. The mixture of Claim 40, wherein said plurality of oligonucleotides comprises four or more oligonucleotides, each attached to a different charge tag.

42. The mixture of Claim 40, wherein said plurality of oligonucleotides comprises ten or more oligonucleotides, each attached to a different charge tag.

43. The mixture of Claim 40, wherein said plurality of oligonucleotides comprises twenty or more oligonucleotides, each attached to a different charge tag.

44. The mixture of Claim 40, wherein said plurality of oligonucleotides comprises fifty or more oligonucleotides, each attached to a different charge tag.

45. The mixture of Claim 40, wherein said charge tags comprise a dye.

46. The mixture of Claim 40, wherein said charge tags comprise a second positively charged moiety.

47. The mixture of Claim 40, wherein said charge tags further comprise one or more nucleotides.

48. The mixture of Claim 40, wherein each of said oligonucleotides attached to a charge tag have a combined net neutral charge and wherein said charge tag has a net positive charge.

49. The mixture of Claim 40, wherein each of said oligonucleotides attached to a charge tag have a combined net negative charge and wherein said charge tag has a net positive charge.

50. The mixture of Claim 40, wherein said charge tags comprise a positively charged phosphoramidite.

51. The mixture of Claim 40, wherein said charge tags comprise a neutral phosphoramidite.